

CLAIMS

1. A wireless communications system which uses at least two kinds of wireless communication networks, enables simultaneously to connect to a basic access network for executing signaling communication in which communication is controlled so as to be continuously switched and to a wireless access network for executing data communications other than the signaling communication and comprises wireless communication terminals and a wireless communication server, characterized in that:

each of the wireless communication terminals comprises a seamless application processing unit for executing connection processing to the basic access network and connection/disconnection processing to and from the wireless access network, a basic access network client processing unit having a client function in the signaling communication, a multicast communication node application processing unit for setting multicast reception using at least the two kinds of the wireless communication networks, and respective network devices corresponding to the respective wireless communication networks; and

the wireless communication server comprises a home agent application processing unit for setting a multicast transmission using at least the two kinds of the wireless

communication networks, a basic access network server processing unit for notifying, when the wireless communication networks are continuously switched, the wireless communication terminals of a wireless communication network acting as a switching candidate, for managing the signaling communication for communicating the status of the respective wireless communication terminals therebetween, and for managing the registration/update processing of the respective wireless communication terminals, a terminal status table for managing the status of the respective wireless communication terminals, a terminal configuration table for managing wireless communication network interfaces implemented in the respective wireless communication terminals, and a preference setting table for managing the order of the wireless communication networks acting as switching candidates when the wireless communication networks are continuously switched.

2. The wireless communications system according to claim 1, characterized in that:

the wireless communication server comprises two servers of,

a home agent server comprising the home agent application processing unit and the basic access network server processing unit,

and a resource server comprising the terminal status table, the terminal configuration table, and the preference setting table; and

the basic access network server processing unit obtains or registers the information in the respective tables of the resource server through a wired or wireless communication network.

3. The wireless communications system according to any of claims 1 and 2, wherein:

when the seamless application processing unit of the wireless communication terminal executes connection processing to the basic access network, the seamless application processing unit tries to connect to the network with reference to basic access network candidate information that in advance records the wireless communication networks used as a candidate for the basic access network as well as when the network cannot be connected, the seamless application processing unit executes processing for sequentially trying to connect to a next candidate network.

4. The wireless communications system according to any of claims 1 to 3, wherein when the network device of a wireless communication terminal detects abnormal communication of the wireless access network, after the

seamless application processing unit notifies the multicast communication node processing application unit of switching of communication to the basic access network and then switches the communication, the seamless application processing unit tries to connect to a wireless access network acting as a next candidate with reference to wireless access network candidate information that in advance records the candidates of wireless communication networks used as the wireless access network as well as when the network cannot be connected, the seamless application processing unit executes processing for sequentially trying to do network connection to a next candidate in the condition that the wireless access network is not the same as the basic access network and the basic access network is connected.

5. The wireless communications system according to any of claims 1 to 4, wherein when a user instructs to switch the wireless access network or the basic access network in the wireless communication terminal, after the seamless application processing unit notifies the multicast communication node application processing unit of switching of communication to the basic access network, the seamless application processing unit executes processing for changing network connection from the current wireless access network

or basic access network to a specified wireless access network or basic access network.

6. The wireless communications system according any of claims 1 to 5, wherein the terminal status table provides information relating to at least the identification symbols of the wireless communication terminals, the basic access network in use, the wireless access network in use, and a multicast communication status.